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Educational Series—No. 7

Hobbies of Blind Adults

by CHARLES G. RITTER

American Foundation for the Blind

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Foreword

The Oxford English Dictionary defines a hobby as “a favorite occupation or topic pursued for amusement . . .” or as “an individual pursuit to which a person is unduly devoted . . .” Modern medical or social thinking would agree with both of these definitions, with certain additions and modifications. Hobbies are carried on mainly for amusement; however, they are necessary for a balanced and full life. Hobbies can become too important and take up too much of a person’s time. The causes of such development are probably to be found in certain individual personality difficulties for which the excessive devotion to a hobby may be only a symptom.

Hobbies are probably of even more importance to the blind than to the sighted because the blind as a rule have more leisure time on their hands. Too many blind people—and their families—fail to realize the many possibilities for engrossing and rewarding hobbies that can be enjoyed satisfactorily by a blind person. They also do not realize that it may happen, as it sometimes does among the sighted, that certain hobbies may lead to pin money earnings or even to a self-supporting job. Such happenings are unusual, though, and are not dealt with in the present volume.

Blind people, their families and friends, and other interested groups will find this pamphlet a first guide to the how-and-why of hobbies for the blind. The author is the Consultant on Special Aids and Appliances for the American Foundation for the Blind and has spent years studying the subject and conferring with his many blind friends as to their experiences and interests. To make the pamphlet more useful, he decided to include addresses and sources of addresses which the newly blind may find worth knowing.

The literature on hobbies for the blind is extremely meager. We hope this pamphlet will, to a certain extent, meet this important need.

M. ROBERT BARNETT
EXECUTIVE DIRECTOR

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I

Introduction

The newly blinded, not to mention their friends and families, tend to have a stereotyped attitude toward blindness. It is an attitude pretty far from the facts. All too often it forces the newly blind individual into a mold which is not comfortable and which reduces the scope of earlier activities, both physical and mental, that otherwise might be continued.

The part hobbies may play in fracturing this mold will differ with different people, depending on age, job prospects, and all the rest. Hobbies for blind people are not too much more important than they are for those with normal sight. They need not be thought of merely as a means of getting through the dreary hours of the day. If they are used to enrich the time during work adjustment, they can lead the way to better work opportunities. If, because of age, work is not an objective, if the individual is at or beyond the "retirement" age, hobbies can lead to richer social contacts and if desirable even to pocket money.

Any activity which is pursued for fun rather than for income may be regarded as a hobby. In this sense, the hobbies which blind people can—and do—enjoy are endless. When blindness comes to one who has never "had time" to develop hobbies, and who, for one reason or another, cannot more or less quickly get back to work, there may be a period which will be rather trying to both the individual and his family. The same thing is seen when sighted people, perfectly sound in all their senses, retire. Blindness has nothing to do with this.

When a newly blinded person, before the loss of sight, has had hobbies which ostensibly depended almost entirely on sight, the adjustment may seem equally hard. An example might be cited of someone who was especially fond of paintings and who perhaps himself painted.

A careful examination of such an interest may reveal how surprisingly little the eyesight is involved. Few of those who crowd the art galleries really *look* at the pictures. They glance at the label, study the catalog, peer at the picture in a general way, and pass on to the next canvas. Most of what they really enjoy are ideas connected with a picture rather than the painting itself. Before there were color reproductions many sighted people who had never actually seen a painting were nevertheless very much interested in art. A blind person is not much worse off today.

Some totally blind people enjoy very much going to galleries with friends who describe pictures more or less adequately. What they hear from their friends and overhear from other visitors can be fitted into the framework they have built up; and, indeed, it is quite possible that their perspicacity and judgment may be every whit as sharp as that of many who have perfect eyesight. After all, there have been art collectors who continued to buy pictures after going blind.

This is an extreme example. Most hobbies are easier to carry on with less modification. Woodworking, model-making, knitting, bowling, barber shop quartet singing, metalworking, jewelry-making, camping, yachting, club work and all the rest, present no great problems. And often where a past hobby offers too few rewards, there are similar activities which have the same sort of appeal and which offer a thoroughly adequate substitute. Weaving makes a good substitute for embroidery. Ceramics is a good substitute for china painting. The camera bug may take up recording.

Most important to remember is that blindness should cause few changes except in the techniques of doing things. The man who never did anything with his hands need not insist on becoming a craftsman, any more than the craftsman should expect to let his skills fall idle. The doctor who has played string quartets for relaxation needn't face the prospect of being put to making leather belts; he can keep on with his music.

This booklet will attempt to indicate the endless variety of possibilities for building up old or new activities.

HOBBY READINESS

While there are activities that may be carried on exclusively in

the home, most of them are enriched by getting out into the community. It is easier if one can visit the stores where supplies are sold or drop by the post office to mail an order. It is much more enjoyable if one can go to visit others with similar hobbies or seek out an expert for advice.

For some, a dog guide affords the ideal answer. A number of agencies exist for the purpose of training such dogs and for training the master to work with the dog.¹ Those to whom this aid to travel appeals may communicate with one or another of these agencies for detailed information.

In general, the cost of the dog and its training is subsidized heavily. The Seeing Eye, Inc. charges a token payment of \$150, which covers also the cost of room and board during the month's training. This sum must be paid by the individual, although as much time as necessary is allowed to pay the full amount.

In general, the applicant must be in excellent health and have a useful life expectancy of at least 12 to 15 years. Some agencies require, too, reasonable assurance that the dog will contribute to the economic or social adjustment of the applicant.

Many, for one reason or another, are not able to adapt to the use of a dog guide. For them, training in foot travel with the aid of a cane may be available on a local or state level.² No longer is it felt that the ability to use a cane well can be picked up haphazardly. And while the techniques have been described with varying degrees of adequacy in various publications,³ training by a qualified instructor is to be urged wherever possible.

With a proper cane technique and judicious reliance on the passerby at hazardous crossings and the like, any blind person who is physically able to get about, and who has reasonably good hearing, should be able to get to the places which will most enrich the pursuit of his hobbies.

Some blind people travel alone with no aids whatever, and of these a few do amazingly well. This is certainly not to be recommended to the newly blind; and it is a question whether anyone who has used a dog or a cane would wish to dispense with the assurance and reassurance that can be had from these aids.

As more and more blind people come to use a cane well, the stigma which in the past was associated particularly with the white

cane is disappearing. The cane, well used, becomes a tool instead of a badge or symbol. In 1953, 46 of the states have passed legislation reserving the use of the white cane to the blind. Today, as a partial consequence, the white cane no longer betokens the blind beggar. It is used by successful blind people in all walks of life. It has become informative, then, rather than conspicuous and is gaining the appreciation of blind and sighted people alike.⁴

A certain skill is needed even for travelling with a friend or sighted guide. This is easily acquired, and the blind individual should learn to teach the guide tactfully and quickly. The main rules are:

1. The blind person takes the guide's arm. This places the sighted person slightly ahead and the motions of his arm or body give hints as to steps up or down.
2. The guide should try to hesitate momentarily before stepping up or down or before a deep crack in the pavement.
3. The guide turns slightly sidewise, perhaps moving his elbow behind him, before a narrow passage.

A good guide is like a good "leader" in ballroom dancing. His motions signal the next step. In this way, it is possible to move rapidly through the most crowded streets and over the most difficult terrain without spoken messages between the pair.

In approaching seats (in a restaurant, for example,) the guide backs the blind person easily to the chair so that the seat touches the back of the leg. Where this is not feasible, he places the hand of his friend on the back of the chair or indicates that they are about to enter a booth.

Other aspects of Hobby Readiness are discussed in Juliet Bindt's *Handbook for the Blind*⁵ which is available in Talking Book form as well as in braille and inkprint.

NOTES AND RECORDS

With many hobbies some method of making notes will be required. For some, braille may remain the ideal solution. Braille is not to be thought of, however, as a necessary concomitant of loss of sight. It is by no means, in most cases, an early requirement even of most of those who could later use it to good advantage.

Where the motivation to learn braille is sufficient it is not particularly difficult. There is no age beyond which it cannot be learned readily. There are few fingers too calloused or insensitive to learn it. In most communities, teachers are available to give instruction at home or in nearby centers. Where such teachers cannot visit with sufficient frequency, it is possible to learn either through free correspondence courses or from the manuals⁶ which may be borrowed from the library for the blind that serves the area.⁷ Braille may be written on slates or braillewriters.⁸

The hobbyist who needs braille only for marking materials or for playing cards would not be obliged to master grade two braille. On the other hand, the individual with a scholarly hobby involving the use of filing systems might feel justified in studying braille grade three, with the idea of applying some of the principles to his own note taking.

A great many people make no use of braille at all. Instead they employ tape recorders or dictation machines. Disc recorders are also sometimes used. Arrangements can often be made through the Special Services Department of the American Foundation for the Blind for discounts on various types of recorders, though not on dictation equipment.

For those with partial sight, a very black line can be produced by mechanical china marking pencils which are sold in most stationery stores.⁹ The pencils sell for around 30 or 35 cents and the leads for about 15 cents a package. Even those who cannot read the blackest inkprint letters can continue to write longhand notes for sighted friends, using one of the various available writing guides.

The typewriter is, of course, an ideal means of communication with sighted people.¹⁰ Those who already know touch typing should have no trouble at all in accustoming themselves to typing without looking. Some beginners especially, like to mark the "home keys" with slivers of adhesive tape for speedier orientation on the keyboard.

One bane of the totally blind is the ribbon reverse that doesn't always work well. This can result in blank pages of typing. Those who are cursed with a machine that has this defect may protect themselves by using carbon paper. If a very clear copy is required,

the ribbon may be put into the "stencil" position and the keys allowed to hit the carbon paper directly.

Hunt-and-peck, or two-finger typists, can quickly learn touch-typing if they cut 3 x 5 cards to slide up between the keys so that each finger has access only to the letters which it is supposed to type. Six cards are used. The left-most goes between the files Q A Z and W S X; the next slides in beside E D C, and so on. The cards should be cut low enough to clear the numerals. After a little practice, the cards can be discarded.

Those who have never typed can secure, in most communities, the services of special home teachers from state or local agencies. If such services are not available a recorded course may be borrowed from the regional library for the blind, or may be purchased. A braille correspondence course in typing is also available.¹¹

II

Handicrafts

Proverbially, blind people are supposed to enjoy handicrafts. Actually, some do, some don't. There was a time when it was felt that the mastery of a craft constituted a tangible demonstration of work accomplishment. It was common practice then to set every newly blinded person who could be persuaded, to making baskets, caning chairs or the like. The theory was that since a person without eyesight does a great deal of seeing by touch, this would develop finger sensitivity.

This is not to demean basketry. It is not even intended to say that some people who never thought of making a basket may not, on losing sight take up the craft with satisfaction and even profit. In Hartford, Connecticut, where mail baskets, rather than mail boxes, seem to be used, or in the Pennsylvania Dutch country, for example, there should be a ready sale for neatly finished basketry products. And, of course, ingenious designs can be worked out for many items which are not customarily made of basketry materials.

The point to be made is that there are no handicrafts for the blind, as such. Most handicrafts can be done without sight. A few can't. Of these few, only a very little sight may be enough to make even some of them practicable.

For those who wish to continue a handicraft which was enjoyed before loss of sight, some modifications in old equipment may be necessary. Or it may be necessary to secure marked measuring devices, timers, or the like.¹² Those who are entering a new type of handicraft may need instruction. In some such crafts, the state or local agency for the blind may be able to provide home instruction. Often, too, it is possible to enroll in established adult education courses. The blind person should first, however, investigate the availability of any special equipment he may need,

for teachers in the ordinary adult education program cannot be expected to know even of the existence of special devices for the blind. It is not, of course, absolutely essential to have a regular teacher. Public libraries usually have a variety of inkprint books, and it is generally possible to share the hobby with a sighted person interested in taking up the same activity. The catalog of American Handicrafts Co., for example, lists over 80 books.¹³ For 25 cents, which covers the handling costs, the Penland School of Handicrafts will mail a national directory of crafts and art suppliers¹⁴ which has over 100 pages of addresses of dealers and manufacturers, many of whom have free catalogs and instruction booklets on various crafts.

LEATHERCRAFTS

Most people content themselves with assembling articles which are purchased in kit form. Leather belts are made by combining links or interlacing strips and adding the hardware. Wallets, key purses and the like are supplied with perforations along the edges for lacing with plastic or leather. Moccasins are assembled by the same lacing techniques.

Two firms have especially cultivated sales to blind people.¹⁵ Both have tools for attaching metal tips like shoe-lace tips to the ends of plastic or leather strips. Both issue catalogs, and occasionally put these out in braille. Other concerns are listed in *Where to Get What*¹⁴ or can be found in local classified telephone directories under "Arts and Craft Supplies" or "Leather".

More ambitious is the production of goods from the tanned skins. This involves the use of templets, tools for attaching snap fasteners, for adding designs, and often the fabrication of special aids which are not commercially available. It is sometimes economical to have special dies made for this type of hobby, and suppliers are listed in the classified telephone directory under "Dies—Cutting". Many suppliers handle embossing dies for tooling leather. Some ingenuity is required to devise methods for spacing these neatly without sight, but a few totally blind people, especially where a ready market exists for hand-crafted leather goods, have gone into it commercially. Others are sometimes able to earn pin money by selling the goods they have assembled from kits.

WOODWORKING

The idea that a circular saw, wood-turning lathe, drill-press, shaper or other power tools can be operated safely without sight usually comes as a surprise to those who have not studied the matter. What is forgotten is that on any such tool, there are landmarks which can safely be located, and the actual danger point is identified by noise.

Naturally, the blind person must retain a healthy respect for the damage such tools can do. There is record of one cock-sure young man who no longer has all his fingers. He is also no longer doing woodwork.

A table-saw, though, is a perfectly safe tool provided it is not used carelessly. The rip-fence and the miter gauge serve to guide the material. The important thing is to think the operation through before starting, to know the tool thoroughly and keep the required landmarks in mind.

In using the drill press, it is wise to make sure the work is properly anchored. An especially handy tool for this purpose is the Float-Lock Safety Vise.¹⁶ This is a full floating vise for all set-ups, which bolts to the left rear corner of the table. For duplicating pieces in small runs it is ideal, although its cost confines its usefulness to the more or less affluent hobbyist.

Many blind people have tried wood turning on a lathe, although it has not been found easy to duplicate pieces. No special equipment is usually found in shops where this is practiced.

Multipurpose tools are put out by Shopsmith and Delta but for the beginner a less expensive, though less "professional" outfit is sold under the name Tool-Pac.¹⁷ Occupying a square yard of floor space, this provides a circular table-saw with rip fence and miter gauge, a sander and buffer, a grinder, and a jointer and shaper. There is also provision for a power take-off for coupling other tools to the same motor. Two separate arbors running at 4500 and 1750 RPM are provided for driving a flexible shaft attachment or drill chuck. This retails for under \$100 and the manufacturer is willing to extend a discount to blind people who present a letter of introduction from the American Foundation for the Blind.

Although this tool lacks the refinements of more professional equipment (the table is not adjustable nor can the blade or table be tilted, nor is there room for a dado head) a good craftsman can devise ways of making it do satisfactory work. The fact that it can only be turned on with a key (making it proof against children) is an extra feature which appeals to parents.

One piece of power equipment which has frustrated many totally blind craftsmen is the jig saw. By mounting a pin in a bar which fits the miter gauge slot found on band saws, it is feasible to cut circles of any size, within the limits of the bed dimensions. A similar arrangement can be improvised on a jig saw. Templets might also be devised to follow the hold-down shoe for making some types of cuts. If Tyler Spiral Blades¹⁸ are used, permitting cutting in any direction without rotation of the work, a careful craftsman could probably use templets for doing odd-shaped cut-out work. In a handsaw frame, these same blades make it possible to follow templets since they do not cut the hand when driven at slow speeds.

Portable saws, such as the Skil-saw, have at first glance frightened some very experienced blind craftsmen. If carefully studied, they can be, and are, used safely without sight. It is, of course, necessary to employ guides which must be clamped in place before the saw is put in operation. A few, who could not afford a separate bench saw, have rigged up mounts for holding them under a fabricated saw table.

In general, all ordinary hand-tools may be used. Saw guides, wood-marking gauges, plane guides, corner clamps, and the like are handled by the Special Services Department of the American Foundation for the Blind.¹² Standard rabbet planes give good control, as do standard miter boxes. The markings on many squares are deep enough for fingernail readings. A dowelling-jig is available to control the drilling of holes for dowels.¹²

Nailing at first may be a problem. A brad-pusher is suitable for small finishing nails, making it possible to drive them without a hammer.¹² A "V" cut in a piece of hardwood may be a handy guide for the beginner. The nail is fitted into the angle, which holds it upright.

A simpler tool to use is a piece of $\frac{3}{4}$ or 1 inch drill rod, drilled through the center to receive the nail. Another piece of drill rod is turned down to fit into the hole, leaving a shoulder so that it does not extend beyond the hollow drill rod. This piece should preferably be hardened. The nail is dropped in the hole and driven by hammering against the hardened piece until the shoulder reaches the top of the holder.

The turret from the above-mentioned dowelling-jig may be used as an aid to drilling holes at right angles to the surface of boards. Another simple drill guide may be fabricated by cutting along the corner of a length of brass angle for about an inch. The sides are then bent out at right angles to form flanges. The drill may now be guided along the inside of the metal upright which can be clamped to the board which is being drilled.

A Rotomatic rule which can be read to $\frac{1}{64}$ inch is available in a 12 inch length, with two and three foot extensions for measurements up to a yard, as is a 12 inch Click-O-Matic rule accurate to $\frac{1}{16}$ inch, which is rapid in its operation.¹² Often two pieces of wood can be clamped together to establish set distances, as in establishing the width of a window, and the like. It is always more accurate to compare than to measure, and comparisons can supply many of the dimensions required in cabinet-making.

Finishing is one of the really difficult jobs when sight is not available. One can do a reasonably good job of applying oil stains with a rag and wiping them off with another rag to secure an even coat. Sometimes the stain is diluted with boiled linseed oil and several coats applied. It is sometimes possible to find wax stains, too, which are relatively easy to apply. But paints, enamels, and lacquers are much more difficult, and most blind people leave this to someone with sight. Small pieces can, of course, be dipped, but even here, bubbles are likely to form if the paint is not of the right consistency.

Another technique which has been reported to work well is chemical dyeing. Woods exposed to ammonia fumes, for example, are said to take on different hues, depending on the type of wood. Once the wood is tinted, it may be given a high french polish in the following manner. The lacquer, thinned down quite a bit,

is brushed on and let stand for 20 minutes. It is then thoroughly wet with kerosene and sanded vigorously until completely smooth with very fine garnet. This procedure is repeated, allowing full drying time between applications. The finer the garnet cloth, the smoother the finish. It is hard work but the results are worth the trouble.

Some may be interested in experimenting with the fairly recent plastic veneers as a solution to the finishing problem.¹⁹ These are color photographs of wood, marble, etc., reproduced on thin plastic sheets which are glued to the surface to be finished. The wood or other surface must be completely smooth and clean, and a skilled mechanic should be able to apply the veneer neatly, working out air bubbles and avoiding wrinkles. Excess glue can be washed off after the veneer is in place. The veneer is then usually coated with varnish or with one of the non-skid plastic finishes which can be applied with a rag or sponge.

For those who know braille, Hjorth's *Basic Woodworking Processes* may be borrowed from the library for the blind or purchased from the American Printing House for the Blind.²⁰

NEEDLECRAFT, CROCHETING AND KNITTING

Some blind women make clothes, especially children's clothes. Most of these depend on sighted help to cut out the patterns. Some have a few basic patterns cut out for them on heavy kraft paper; and some have the edges of ordinary patterns reinforced with scotch tape.

Many of the standard sewing machine guides are quite helpful. The Simon Attachment Co.²¹ has a line of devices which have been found especially useful to blind operators. Where there is undue fear of the needle, a needle guard may be secured at a reasonable price from the Industrial Division of Singer Sewing Machine Co.,²² although most people find these unnecessary. After all, the needle cannot pierce the finger, if the finger does not travel over the shoe. These guards, incidentally, are not even known to most branch offices of sewing machine companies.

Needle-threaders are available for both sewing machine needles and sewing needles. Wire-loop threaders may be had in most no-

tions departments or may be had gratis by sending a stamped, self-addressed envelope to the Special Services Department of the American Foundation for the Blind. The same department has for sale a device known as the "Wink" needle-threader which works on both kinds of needles and the Edwards needle-threader for sewing needles, as well as self-threading sewing needles.¹² Self-threading sewing machine needles are put out by John Dritz & Sons and should be available in most notions departments. Sears, Roebuck also has self-threading sewing machine needles of a different design, which in the current catalog are not listed as such in the index, but are carried on a two-page bargain notions spread at a price of 20 for \$2.00.²³

Marked tape measures are available, as are marked hem gauges.¹² Some of the commercial hem measures have raised graduations which can be read by touch.

Simple embroidery might be attempted with the aid of a raised-line drawing board.²⁴ After the design is copied on the plastic paper, the sheet is basted to the material and the design can be followed. The plastic is torn off after the embroidery is completed.

Pinning is usually preferred to basting when a seam is to be sewn, although some people like to baste with coarse thread. Pins are still easier.

In braille, Carrol's *Complete Guide to Modern Knitting & Crocheting*²⁵ may prove helpful. Also available is Duncan's *Complete Book of Progressive Knitting*.²⁶

Few of those who have not enjoyed crochet work before, take it up after loss of sight. The same applies to tatting. Many, however, do take up knitting. Beginners usually confine themselves to simple stoles, then advance to afghan squares, and later to more complicated knitting—baby booties, socks, and even more ambitious projects. No special equipment is used except the tape measure. In England a braille counter has been put out, and some people use small safety pins or eyelets which fit over the needles in order to mark places during knitting. Those who are following patterns sometimes use the available knitting stitch gauges,¹² a tape measure which has attached an open rectangle for the purpose of determining whether the proper number of

stitches per inch are being obtained with the needles used, so that the correct needle size can be secured.

More closely related to knitting than to weaving are braided rag-rugs. Most notions departments handle rug-braider kits.²⁷ These consist of cone shaped metal braiders through which material is pulled. They roll the strips so that a neat reversible rug can result. Three sets of different sizes are usually included so that materials of different weights can be braided. The braids, instead of being sewn together, are laced with twine using a lacer which comes with the kit. Wool strips can often be bought although there are rotary knives for slitting old material.²⁸

HAND WEAVING

Most people, at the time of loss of sight, have not had weaving as a hobby. A common practice is to start with jersey-loop pot holders, which is not universally advisable since, for many, the rewards are not adequate. Of course, purses, rugs, and hats can be fabricated from the loop squares. Many 5 and 10 cent stores and notions departments handle both the looms and loops. As an example, a mail order house currently lists a kit at \$1.19 including a metal loom for 6 inch squares, a hook and two packs of assorted cotton loops.

For less than \$2.00 it is possible to get a so-called "Weave-It" loom which provides for four inch squares of wool, nylon, or cotton, woven from yarn. This price includes the plastic frame with metal pins, the weaving needle, and an inkprint instruction book.²⁹

A slightly more advanced device of the same sort is an adjustable loom providing for widths of 7 to 14 inches, and lengths in the same range.³⁰ Still more advanced in some ways are waffle-weave rug frames. Such a frame for 21 by 30 inch rugs employs a natural wood frame with plastic shuttle.³¹ Four skeins of Maysville Rug filler (costing about \$2.50) and a tube of carpet warp (about 60 cents) are required for a rug.

A very simple example of the sort of loom used in weaving cloth is the Bonhop Hand Treadle Loom.³² This is already threaded and set up with 36 inches of cotton warp and includes three shuttles, colored yarn and a detailed inkprint instruction book.

Suppliers of a variety of more advanced looms, ranging from table looms to floor looms with foot treadles, are listed in *Where to Get What* as are suppliers of yarns, fillers, and warps.

The most difficult feature of textile weaving is "warping" the loom. Some of the smaller looms are already warped on delivery. Sighted instruction, or instruction by a skilled blind weaver, however, will always be sought, and the necessary techniques can thus be acquired.

A useful handbook is available in Grade 11½ braille: *The Games of Weaving, with first lessons in the craft.*³³

BASKETRY AND SEATING

This, as has already been noted, is almost a tradition handicraft for the blind. As both baskets and cane chair seats have been increasingly displaced by other materials, the vogue has tended to wane. Genuine satisfaction may, however, result from designing and weaving a good basket or some other object made of basketry materials, as well as from seating or reseating a chair or stool.

Two or three firms not listed in *Where to Get What* have been quite cooperative in working with blind people and may be mentioned:

Commonwealth Manufacturing Company

Gardner, Massachusetts

American Rattan & Reed Manufacturing Co.

268 Norman Ave., Brooklyn 22, N. Y.

Charles H. Demarest, Inc.

227 Water Street, New York, N. Y.

For those wishing braille instruction the following book may prove helpful:

Dietrich: *Caning Manual* ³⁴

PLASTICS

The plastics field falls into two categories: fabrication and casting. The fabricator is likely to be the person who has a wood-working shop, which, allowing for differences in assembly and finishing techniques, is a closely related hobby.

Casting is a field which more easily leads to profit. A variety

of stock rubber molds may be purchased, and, with practice, rubber molds can be made of existing objects.

The casting materials themselves range from transparent to marble—or ivory-like materials. These are often easier to handle than plaster-of-paris. In addition to the suppliers listed in *Where to Get What*,¹⁴ others often advertise in magazines like *Popular Science* or *Popular Mechanics*.

METALCRAFTS AND JEWELRY

Metalcrafts cover everything from elaborate machine work to objects fabricated from tin cans. For some reason metal lathe operations have been accepted more slowly than wood turning on a lathe, although the operator has far better control with a compound rest than with a chisel biting into a piece of wood with only a tool rest to steady it.

Dials on the compound rest may be marked with CVH Relievo Paint¹² but this, in practice, has not been found too useful. The ability to judge the advance of the tool within a few thousandths of an inch is quickly developed, and micrometers adapted to touch reading are available.¹² Ordinary calipers are used for comparisons. Use of the drill press, with metal, offers no greater obstacles than use with wood. Power hacksaws, surface grinders, millers, shapers all offer excellent control.

Hammered metal objects, including jewelry, can be turned out most effectively without sight. The usual tools and molds can be used without modifications. Many new and effective free-form designs have been put in use by metalwork shops in many of the agencies for the blind.

With practice, it is possible to do reasonably satisfactory soldering, even with a standard iron, although the quick-heat irons are easier to handle.¹² These tools are suitable, of course, only for soft-soldering. Some people have made up for themselves, or purchased, resistance soldering irons, consisting of a transformer, capable of delivering substantial currents at low voltage, a clip, and a carbon tip. Solder has also been put out in ribbon form, requiring only the heat of a match or cigaret lighter to make a soldered joint.³⁵ Standard electric welding outfits can be used. Intricate soldering

operations (especially silver solder joints) are usually farmed out.

Buffing, polishing, and finishing can be done although sighted inspection is recommended before the finish is applied. Chemical polishing is not difficult, especially with some of the new ready-mixed solutions.

If instructors can be found, formed wire-jewelry can be a pleasant hobby. Other jewelry items are bracelets, shell brooches and earrings. Bead craft objects are also popular.³⁶

CERAMICS

Early ceramic attempts by the blind were sometimes overambitious but excellent projects have more recently been evolved which have led to real satisfaction.

Beginners may start with air hardening clays which do not require firing. A variety of molds may be purchased, as well as non-fire glazes which come in crystal-like sheets.³⁷ As a hobby, ceramics can be taken to any degree of advancement. Some blind people have gone on to clays which require oven hardening, and a few have procured regular kilns which can be used also to glaze copper or other metal objects. For the blind, one unsolved problem in firing is that it is not possible to check temperature cones which ordinarily are employed to indicate the completion of the firing process.

DOLLCRAFT AND OTHER PLAYTHINGS

A variety of dolls have been made by blind people and many of the agencies have teachers who are skilled in making one kind or another. These include stuffed rag-dolls, woolen dolls, and fabricated dolls. Dressing dolls, for the skilled needle crafts practitioner, is also a hobby some enjoy. In the pursuit of this last activity it is often possible to gain access to museum collections, which combines the making of the clothes with a study of the history of costume.

Doll toys—cribs, and the like—are also sometimes challenging handicraft projects. The *Playthings Directory*³⁸ offers a good list of suppliers for parts such as doll heads, eyes, and so on.

III

General Hobbies

Since few adults with normal sight really cultivate any of the crafts, it is only logical to assume that few blind adults, unless especially stimulated in one way or another, would turn to such activities. There are, on the other hand, a variety of areas in which people enjoy doing things and with which blind people also can keep pleasantly occupied. The home, for example, is not ordinarily thought of as providing hobbies, and yet there is no doubt that doing things about the house is one of the most wide-spread of all adult recreational activities. There is, in other words, a difference in the attitudes of the woman who merely sees to it that her home is clean and running smoothly and the woman who is always planning changes in furniture arrangements, making new drapes, or organizing social get-togethers. Similarly, there are men who do nothing about the house except pay for needed services; home is no hobby for them. If these fix-up or change-around jobs are done for fun instead of to save money, they can be legitimately regarded as hobbies.

HOME REPAIRS

The satisfaction of handling a repair job is often considerably enhanced by loss of sight: the challenge is a little greater. By and large, not many special tools are required: in fact many people get by with nothing special. Suppose a man wanted to lay a new terrace and needed to check the slope. He can establish a level by placing stakes and attaching a length of garden hose to each, with the openings facing upward. He can then keep adding water and adjusting the height of the ends until the water is flush with the two tops. By measuring down from the tops of the hose, he can set the desired slope on the stakes.

Alternately, he can easily make himself a level by attaching a heavy brass diamond to a piece of good, straight, kiln-dried lum-

ber (say a length of 2 x 4). The diamond should have a slightly over-sized hole towards one end so that there is no binding on the nail from which it is hung. With the "level" on a surface known to be level, a brad is driven into the wood opposite the bottom of the diamond. Placed against a surface known to be plumb, another brad may be driven in to adapt the level to both purposes. Other designs for levels, giving audible signals, can also be devised, using a battery, short plumb line, and buzzer.

The braille literature on home repairs is comparatively extensive.³⁹ Certain inkprint books also have numerous ideas that can lead to simplification of home lay-out, or the elimination of booby traps.

From time to time there have been contests for architects which, it was hoped, would lead to the ideal home for a blind person. A few of the ideas might appeal to the newly blind, but most of them were pretty impractical. On the other hand as increasing emphasis is placed on efficiency and safety, all homes are becoming better and better suited to life without sight.

One particular bane for the blind, for example, is the partially open door. If the family is hard to train, some home owners might like to consider installing sliding doors on closets or kitchen cabinets. This is even a selling point for sighted people in many new homes.

Nervous newly blinded people sometimes indulge in a variety of special guides—wires under rugs, along the garden walks, and so on; gates at tops of stairs. In most cases these quickly come to seem a nuisance and are removed. In the ordinary home, there are enough cues: a carpet ends, a clock ticks, sounds come through the window to keep orientation straight.

Repairs which have been successfully tackled by totally blind people have ranged all the way from replacing a defective wall switch to installing a new heating plant or building a garden summer house. It is always necessary to have the specialized knowledge involved: one does not trifle with electricity, for instance, without knowing every precaution that should be taken and without knowing enough to keep fuses from blowing. One does not, in fact, attempt plumbing or wiring alterations or additions without checking thoroughly the requirements of the local building code. Many

communities require the services of a licensed electrician or plumber, and/or the filing of architect's plans for all important alterations. The blind person can, of course, do all the planning and lay-out work, even if it may be contrary to regulations for him to do the actual physical labor. It is often, too, possible to secure temporary licenses by taking an examination and paying a nominal registration fee.

So closely related as to be really a part of home repairs is appliance repairing. A number of blind people do this professionally—clean and undercut commutators on vacuum cleaners, replace brushes, install or repair elements on electric irons, and rewire lamps. Upholstery, except for matching fabrics, has also been taught to numerous blind people.⁴⁰

GARDENING

One of the simplest gardens is a lawn, and yet care of lawns has seemed to many blind people too difficult. This is especially true of mowing. A variety of techniques have been evolved, depending on the type of layout and the size of the lawn to be cared for. In general, it can be said that mowing a lawn without sight is both more difficult and time consuming.

With a small lawn, the main worry is cutting into flowers, small shrubs and the like. With a larger lawn, the problem is to keep going in a straight line. One man uses as an adjunct a length of 1 by 4. He steps forward from this, taking one step away, then moves the board ahead after each swathe has been cared for. Others have used stakes and attached guide lines. Generous overlaps are taken to be sure the entire lawn is covered. Even so, with most lawn-mowers, it is necessary to go over the lawn carefully to make sure that any fast-growing weeds have not been skipped.

Floriculture can be extremely rewarding. One blind man had, at last reports, 285 named varieties of gladiolas in his garden. For labelling, sheet brass or aluminum or even zinc ⁴¹ makes adequate permanent labels and can be brailled in a standard braille slate. Even the individual who does not know braille can devise codes of his own for this purpose.

More of the work will, of course, be done on hands and knees

than might ordinarily be the case; and it may take a while to know the weeds from the flowers by the shape of the leaves or stalk. Also, in applying some of the more potent fertilizers, it will be necessary to choose watering cans and perhaps even shields to make possible applying the chemicals without damaging the plants.

Vegetable and herb gardens present, by and large, the same type of problems except that the intricate lay-out problems of the decorative flower gardens are eliminated. It is a simple matter to lay the vegetable garden out to insure quick orientation.

Guide wires are found helpful by many people. For this purpose, metal stakes are often employed—a simple stake with a hole towards the top, and a 25 foot (or shorter) length of wire permanently anchored, and a T-stake with a similar hole in the same position relative to the top. The “T” serves to wind the wire taut after the stake has been driven into the ground. Stranded phosphor bronze of a suitable size stands up well in this service, or one of the plastic coated stranded cables may be used.

These wires can be employed from the time the ground has been dug up. They can be the guides for harrowing or raking the newly turned earth, for digging the furrows and for subsequent cultivation.

The late Dr. Hugh Findlay, of Columbia University, designed a kit of tools for the blind gardener.⁴² These incorporated clips for attaching the tools to the guide wires, and stops to control the depth of furrows. The stops were in the form of flat rocker-shaped extensions that presented a relatively large surface to the earth and kept the tool from deeper penetration. On the hoe, two sets of holes were provided to fit the stops at two positions across a corner of the hoe. On the spade the same provisions were made for setting the depth of bite.

On the cultivator, or weeder (as it is sometimes called), the clip for anchoring to the guide wire was mounted on a movable bar which could be adjusted to hold the blades at the desired distance from the plants.

By the terms of Dr. Findlay's will, these tools may not be sold to any blind person. Garden clubs, Lions clubs, or other groups, however, can usually be interested in supplying a kit of the tools

which currently may be ordered through the American Foundation for the Blind at a cost of about \$36.80. Most blind people, though, manage to garden without any special devices.

A trick which is sometimes employed at the start of the growing season is to plant carrot seeds along with the regular seeds, only closely enough to establish the lines of the furrows. Carrots come up about as rapidly as weeds, and can be thinned out as the other plantings are established.

ANIMAL BREEDING

Quite a variety of animals can be raised without sight, although it is usual to borrow a pair of eyes from time to time. These animals include chickens, turkeys, cats, dogs, rabbits, canaries, parakeets, bees and larger stock.⁴³ A few people have earned at least a supplementary income by raising laboratory animals although a market is not always easily found.

Goats have been raised with both profit and pleasure, where a little spare land was available. The objectionable odors so popularly believed to be common can easily be eliminated by periodic visits of the veterinarian. Goats are most affectionate creatures and can afford a sizeable amount of companionship of a sort.

COOKING

Apart from meeting the daily demands for food, cooking is a hobby which male or female can cultivate for fun. In no other department do so many of the standard tools lend themselves so perfectly to operating without sight. Indeed, in the entire catalog of over 200 items handled by the American Foundation for the Blind, this is the section which, with one exception, is completely given over to standard devices.

Just the same, newly blinded people often shy away from the cook stove or barbecue pit. Fear of lighting gas stoves, particularly, may be persistent, although heat and sound give plenty of indication that a burner is lit and the odor of gas gives warning when a flame is blown out or has failed to ignite. When there is no pilot light a flint and steel gas stove lighter can be both a reassuring and a handy device.¹²

There are, it must be admitted, some difficult problems in the kitchen. There seems to be no sure way of telling when a potato is discolored, although discoloration which is not detectable by touch would not affect the flavor. Similar discolorations in other vegetables may present the same problem.

Many people, too, find frosting cakes with boiled icings rather difficult, although some of the uncooked icings can be handled at a leisurely pace. People vary, too, in the ability to make neat drop or press cookies or to fill muffin tins neatly and evenly.

Knowing braille is, of course, a great convenience for the blind cook, since it makes readily available a variety of cook books.⁴⁴ It also simplifies the collection of cooking charts, the marking of herbs, condiments, and canned goods, and the gradual accumulation of special recipes. A convenient form in which to keep special recipes is on 4 by 6 cards. The name of the dish should be placed at the bottom of the first card so that it can be filed upside down, with the braille facing the back of the file. In this way, the finger can dip behind the card and read the title without removing the card from the box. If the recipe requires two or more cards, they can be bound together with a strip of cellulose or other pressure-sensitive adhesive tape running along the left edge of the cards.

Braille is not, of course, essential. Many people are such experienced cooks or so adventurous in spirit that recipes are not required. Others have their recipes recorded either on discs or tape. For marking herbs and condiments a few letters can be written on the container with plastic paint, known as CVH Relievo Paint.¹² The same material may be used to mark oven controls so that the very easy, modern low-temperature roasting methods can be safely used. Marked interval timers are invaluable.¹²

Ready-mixes multiply by the month and can take much of the drudgery out of cooking, just as frozen foods take the drudgery out of the preparation of vegetables.

Outdoor cooking depends largely on the knack of judging the heat of the coals and the choice of good tools and accessories. The average seeing outdoor chef pulls a few boners in his day, and the blind outdoor chef is no exception. One comfort the *male* has, blind or sighted: he can get away with murder if he has sufficient poise and talks expertly about cooking.

SCULPTURE AND PAINTING

Rarely do totally blind people retain any interest in painting although some do derive considerable satisfaction from brushless or "finger" painting. The materials for this form of painting are sold in virtually all art supply shops as well as in well-equipped toy shops. Originally developed for children, finger paints are water-removeable colored pastes which may be applied to highly sized paper or to oil cloth. Not only fingers but palms, combs, crumpled newspaper, and the like are employed to spread the pigments. Regardless of the results, the sheer physical pleasure of spreading the pastes is tonic.

It would be difficult to determine how little sight would have to remain to open up the field of oils or water colors. One would suppose that a fairly good sense of colors would be a prerequisite, but that may not be so. It certainly would not for charcoal or crayon sketching. One of the best known cartoonists of today has recently acknowledged that he has been legally blind for most of his creative life. No longer is fine detail a requirement in pictures, and as painting is usually taught in adult education classes, it may even improve the techniques of seeing for the partially blind.

When it comes to sculpture, very exciting, and even saleable work, can be done without any sight at all. The beginner can work with plasticene, which does not harden and which, therefore, can be reworked indefinitely. Even clay, after the methods have been learned, can be kept workable over long periods of time.

The best works of sculpture by blind persons I myself have seen have been self-portraits. Such attempts as have been made at other types of representation have been quite crude. But portraiture and figures offer scope and inspiration, and it seems obvious that, except for the problem of models, the field can be developed.

The blind sculptor usually finds it better to work from "behind" the figure. This gives maximum tactual closeness to work. He is inclined to rely more on fingers and less on clay-working tools.

If the figure is not too large, rubber molds can be made and reproductions cast. (See, under "Handicrafts", the section on "Plastics.")

PHOTOGRAPHY

There have been newspaper accounts (probably somewhat exaggerated) of totally blind professional portrait photographers. Frankly, this seems a little far-fetched.

With a minimum of sighted help, though, excellent work can be done. One totally blind man, who was a professional photographer before loss of sight, does considerable portrait work for friends and has lately been making what he calls "conversation portraits" showing one subject two or more times in the same pictures. He seeks help in setting the focus (although he tells the assistant at what point he wants the indicator) and in setting the speed and stopping down the iris, but places his own lights or works with flashlight.

On the other hand, it takes surprisingly little sight to center a figure on the ground glass of a Graflex or similar view camera when the lighting is sufficiently intense. Hunches play a large part in such photography, but some excellent results have been turned out. A few markings on the controls are often used to help in focussing, or sighted assistance is employed.

At least one blind father finds that he really knew what his children looked like only after taking up home movies as a hobby. He can now sit behind the screen so that he can get close enough without blocking the light and see their faces at sufficient magnification to study details.

But even if absence of sight makes picture-taking an unappealing hobby, it is possible to take an active part in photography, especially in the family situation. There is no problem in loading the film in developing tanks, and in mixing solutions and completely processing the film. No sight is required to watch the temperatures of solutions, using the 25-125 degree liquid thermometer, adapted for touch reading.¹² It is equally feasible to make run-of-the-mill prints with reasonably good negatives and carry them through to the final matte or glossy finish. Many a blind father has found this an ideal hobby to carry on with his sons.

MUSIC

Among the creative fields, music has always been regarded as a "natural" for the blind, although, when the facts are examined, it is one of the hardest in which blind people can achieve a satisfactory career. Most of the outstanding successes have been in jazz, folk music, or the organ (where the audience doesn't really *see* the artist.) Where a professional soloist loses his sight, he can, of course, usually continue. It is suspected that one of the greatest living conductors is legally blind, as are some of the best known vocalists.

In choral work, the problems are not musical. Newly blinded people sometimes give up because of the processional, and the difficulties of getting into the choir loft. The truth is, the blind person can be entirely inconspicuous by simply letting a hand touch the sleeve of his neighbor's gown. With a bit of practice he can readily learn to take his place wherever the choir is to be seated.

One man, who did considerable oratorio solo work had the words and music transcribed into braille on alternate pages of black paper so that the score blended in with his clothing. This, of course, involved his having the music dictated while he transcribed it into braille. Two books exist in braille which enable the individual to familiarize himself with the braille music code.⁴⁵

Much music has already been published in braille.⁴⁶ There are also a great many single copies of hand-transcribed braille music.⁴⁷ In addition various volunteer groups are willing to transcribe music on request.⁴⁸ For popular music a simplified system of notation has been devised by Connie Anderson, a professional artist in Columbus, Ohio. This makes it possible to set the music for a popular song on a single sheet of braille paper. Efforts are being made to make possible the procurement of any current hit in this form.

For the out-and-out beginner, a music course on records is available at an extremely low cost. This is for use with a "song flute" or with an ocarina (sometimes supplied at no extra charge with the course).⁴⁹

RECORDING

Sound recording has been called the "camera of the blind." It is certain that interest is strong among those with no technical bent as well as with those who are "high fidelity" enthusiasts.

It is possible, with a hobby like this, to spend almost as much money as one wants, or surprisingly little. The choice will depend on numerous factors. Just as good photographs are possible with a box camera on which there is fixed focus, fixed shutter speed; so in recording equipment the least expensive can produce good results with a minimum of adjustments. Indeed, as the equipment becomes more costly, the need for skill in operating goes up.

For the beginner, by far the easiest machine to operate is a tape recorder. The tape is not exactly cheap, but it can be used repeatedly—erasing the old material as new material is recorded. In general, the faster the recording speed, the better the fidelity. A speed of 15 inches per second gives professional quality (other things being equal). At the same time, the faster the recording speed, the shorter the playing time. A fair compromise is a speed of $7\frac{1}{2}$ inches per second. This gives about 30 minutes of recording time on a 7 inch reel of tape. The majority of low-cost machines are equipped to record two sound tracks on a reel, so that after running through in one direction, the tape can be turned over (or the machine reversed in some models) to allow for another half hour of recording on the same tape.

At $3\frac{3}{4}$ inches per second, the quality is still adequate for music. Although there will not be the same brilliance of reproduction and there will be more background noise, the playing time is doubled. Some machines are made to record at $1\frac{7}{8}$ inches per second which, really, is not quite good enough for music, except for reference purposes. For speech, despite the still greater ground noise, it is usually adequate and provides for an unbroken recording of two hours on each recording band of a 7-inch reel.

Some models of tape recorders operate at multiple speeds—that is $7\frac{1}{2}$ and $3\frac{3}{4}$, or $3\frac{3}{4}$ and $1\frac{7}{8}$. At least one model can be set to operate on any one of three speeds. In one inexpensive and some

of the more costly sets, the tape can be reversed to record in both directions. Most sets provide a fast forward speed for skipping and a fast reverse speed for rapid return to the start of the tape. A few models can be started and stopped by a separate foot switch for dictation purposes. With all models, it is possible to correct by re-recording over the previously recorded section—erasure taking place automatically a split second before the new recording is placed on the tape.

Wire recorders may also be used without sight but are less popular, mainly because of the greater difficulty of handling snarls and kinks or breaks in the wire. Otherwise, their operation is similar to tape.

Disc recorders are of two general types: those which use lacquer coated discs from which a thread is cut to provide the sound track; and those which use thin plastic discs into which an embossing stylus presses a furrow to make the sound track. For music the former method is preferable, as it is, too, if a recording is to be expected to play on all types of phonographs. Recordings can be made at any of the standard speeds. The draw-backs are the relatively high cost of recording blanks, the fairly rapid wear of the styli, and the occasional tangling of the cut threads with the stylus.

The second type, commonly called embossing, offers the use of compact, inexpensive discs, greater playing time (since more lines of sound track can be squeezed into each inch), and freedom from handling cut-out threads of lacquer. The quality is quite satisfactory for speech, but the records will play only with very light phonograph pickups. The Special Services Department of the American Foundation for the Blind has for sale a pickup designed to play such records, and this can be installed on any privately owned phonograph which has a turntable speed of 33-1/3 revolutions per minute. Embossed recordings cannot be made satisfactorily at higher speeds.

Machines for making embossed recordings are sold commercially as dictation equipment. Unless purchased second-hand, such machines are likely to be expensive. A much less costly machine is currently being offered by the Foundation.¹²

Beginners will have a number of things to learn by experience

—judging the volume that can safely be recorded by listening with earphones as the record is made, judging where to place microphones, and so on.

Whatever the purpose, however, recording is a hobby worth working on. Many people have worked through the hobby stage to a profitable living with the medium.

HAM RADIO

Amateur radio operators fall into several categories: those who merely want to extend their acquaintance; those who look forward to helping out in emergency situations; those who use it as a stepping stone to a fuller knowledge of electronics; and those who are looking forward to making a living in some phase of radio.

Even for the first groups, the Government requires a certain technical background. The operator must know the Morse International Radio Code.⁵⁰ He must also know the basic elements of radio, as well as the rules of the air. Within recent years a new class of license has been set up, the Novice License. This requires the ability to receive and send 5 words a minute in code, plus a very elementary knowledge of electronics. The examination is taken orally in person at the nearest office of the Federal Communications Commission. The license is good for a year and is not renewable.

If the novice sticks mainly to CW, or code, while he is on the air, he can easily pick up the higher speed of 13 words a minute required for the standard ham license. He can also “learn by doing” so that by the end of his first year he should know enough to pass the more difficult technical examination he must then take.

For the man or woman who knows braille a fine monthly magazine is put out by the Braille Technical Press.⁵¹ Two braille versions of up-to-date books may also be borrowed or purchased.⁵² People who do not know braille may have material read or recorded for them.

For code sending and receiving, a ham station need not be expensive. It can be purchased or built, depending on personal factors. When speech is to be broadcast, the station is more ex-

pensive, but need not be out of reach. Nor need it be bulky. As a matter of fact, considerable distances can be covered by a portable unit.

Few hobbies arouse so much enthusiasm among devotees, and the dark circles under the eyes of a lot of blind people may be attributed to the fact that most of the previous night was spent talking with people on the other side of the globe.

MAGIC

Many of the hands that are "quicker than the eye" belong to people who have lost their eyesight. This, of course, need not surprise anyone who recalls how often a blindfold is employed by sighted prestidigitators.

As a hobby, of course, magic requires, more than a facility with the hands, a public speaking presence, the ability to hand out a glib line, a dry sense of humor; but it has been used to gain for a number of people a quicker acceptance into the community. Such people are in great demand at club and other functions and can be, in the best sense of the word, the "life of the party."

Suppliers of equipment are usually listed in the classified telephone directories of larger cities under the heading, "Magical Apparatus." One New York dealer has a 400 page catalog.⁵³

Since nothing appears to be available in braille, sighted help will always be required. In many communities there are clubs where performers get together, and it often happens that sighted performers enjoy taking a blind beginner in hand. The rewards the practice of magic have to offer to the right blind people show up in many different ways.

READING

Planned reading, as distinguished from reading as a mere pastime, definitely is a creative hobby. The Federal government through the Library of Congress provides braille and Talking Books which are circulated by a selected number of libraries throughout the country.⁷ Numerous periodicals, many of them free, are also published by interested groups.⁵⁴ However, there are many frustrations—so many things are available in neither braille nor Talking Book form; there may be no funds to pay read-

ers; and volunteers may be hard to find. The National Committee for Recording for the Blind ⁵⁵ strives to stimulate the establishment of local recording groups and to coordinate their activities; and there are independent volunteer groups as well, which record on embossed discs⁵⁶ all types of material for the serious student. If the phonograph which is available will not play such records, it can be adapted as related under section on Recording.

Those with a little residual sight should also investigate the various visual aids which have been found helpful. These range from inexpensive little tripod magnifiers up to a projection reader which makes the letters in a phone book appear two inches high on a screen at the front of the device.¹² Many kinds of reading will involve the use of maps. Special maps can readily be marked with CVH Relievo Paint.¹² This material, which is applied by squeezing from a small glassine cone after the manner of a pastrybag, may be sprinkled while still wet with flock, tiny beads, or other materials to give much more detail than is possible with the usual press-embossed maps.⁵⁷ Highways, for example, might be coated with flock, railways with beads, and political division left plain. Globes can be marked with this same paint.

The raised line drawing board¹² offers another invaluable aid to the serious reader since anyone can quickly and easily make diagrams and sketches to illuminate difficult points in the reading. Plastic is placed over a rubber-covered board and lines drawn with a ball point pen come up on the top surface of the plastic. If the sketches are to be preserved, they should be attached with adhesive to heavier paper.

COLLECTING

It is very difficult for the non-collector to develop any insight whatever into the springs and drives that invest the out-and-out collector. Often, of course, there is a buried profit-motive, when the items collected are expected to possess an enhanced value, either with the mere passage of time or from being brought together in a unique way that someone later will be willing to pay for. This the non-collector can appreciate. He can also appreciate the fact that the skills involved in the intelligent pursuit of a hobby of this sort may lead to study which can have value in other direc-

tions. The collector of antiques, for instance, learns incidentally a great deal about history, about fine woods, about a host of subjects which are, in themselves fascinating—and the more so in being tied up with another set of interests.

The term “collecting” immediately suggests stamps and coins or first editions or pictures. The newly blind collector can decide whether the rewards would be ample for continuing to build such collections which, if bargains are to be sought, require the more or less constant use of a pair of eyes. It is by no means impossible, however, to continue or acquire the knowledge that leads to identification of “finds” in junk shops.

On the other hand, all sorts of collections can be built up which require very little assistance from sighted people. Among the more common are antiques, miniature china animals, shells, china or glass, phonograph records, objects relating to the blind (braille slates, etc.), trivets, guns, sculpture (or sculpture facsimiles),⁵⁸ silverware, and folk songs. Some of these, apart from the expense of travel, involve little or no cash. The collector of shells, for example, might want to speed up his fun by tipping a couple of youngsters to help find shells along a beach, although he can perfectly well find shells with his cane and feet. Similarly the collector of folk songs, once he has his tape recorder, may feel obliged to set up a few beers for the obliging old-timer who sings him old ditties.

Most of the fun in making even the other sort of collections is browsing through junk shops where the dealer has not taken the trouble to study the materials he handles. It is much more exciting to find, buried in a batch of worthless glassware a rare piece of Sandwich glass for 35¢ than to pay a fancy price for the same thing in a bona fide antique shop.

One challenging and rewarding hobby is collecting records by blind artists, the difficulty being to learn who is blind. Some of the very finest organ recordings, for example, are by blind organists. And many blind collectors of the most progressive jazz have been very much surprised to find that their best records were entirely the product of a blind pianist. A current project of one of the companies calls for a blind man to record the entire organ works of Bach and some albums have already been released. Blind Lemon records are among the most highly prized folk music collectors’

items. Sonny Terry records, in the same field, are becoming scarce, as are some of the best Art Tatum recordings in the field of jazz. But there is nothing in the catalogs to tell who is blind; and it so often happens that when recordings are pushed as being by blind musicians, they are not the kind of records that could be sold on a purely competitive basis.

INVENTING

Inventors hope either to make a fortune or to benefit mankind. In the rare cases where an idea is conceived, carried through to production and offered for sale, inventing would not be called a hobby. But since so few inventions ever reach that stage and so few people even get back the expenses of developing their brain children, the rewards usually involve the fun of trying and hoping. In this sense, inventing is probably the most heart-breaking of all hobbies.

Since the popularity of this hobby is so widespread among blind people, it should be included here—if only to answer some of the questions which are repeatedly raised.

A practice which many inventors follow is to have a description and sketch of the idea witnessed. This should also be signed by the inventor. The usual form for the witness to sign is “read and understood” followed by the date and signature. This should be done in duplicate. One copy is retained, the other is addressed to the inventor himself, sent by registered mail, then retained unopened so that if the occasion arises where the date of conception must be established the unopened registered letter later places the burden of proof on the U.S. Post Office.

The next step in the patent chain is to have a search made of the past patents. This will cost as much as \$100, or possibly even more, depending on the complications encountered. It can be arranged for through any registered patent attorney. These are listed under the heading “Patent Attorneys and Agents” in classified telephone directories. It is wise to have this done before spending any money on models for two reasons: there may be numerous examples of the same device which already have been patented; and it may be possible to avoid conflict with existing patents by making certain changes in method or approach.

If nothing is found to interfere with the invention, the next step is to file for a patent. This requires drawings to conform to a rigid tradition, plus a full description, and requires, practically, the services of a patent attorney. As soon as the application is filed, the inventor is protected (up to a certain point) so that the item can be produced or shown with the label "Patent Pending."

Since a period of anywhere from about 9 months to two or three years may elapse between filing of the application and granting of the actual patent, there is always the possibility that an almost identical product may be in process at the time of the original application. If this happens, the later applicant has no recourse unless he can establish priority of conception. Moreover, after he receives a patent, if there are infringements, he himself must take each case to the courts—an expensive business.

What, then, is the value of a patent that will cost anywhere from \$250 to \$1,000? It has value in two directions. If the inventor is financially able to put the product on the market in a big way it will tend to frighten off plagiarists; and if it covers a product for which commercial manufacturers will clamor (how few of these there are!), it gives him a better bargaining position. Assuming the product is really likely to be epoch-making, the whole patent angle deserves very serious study. Various types of patents can be taken out around the one product. On this score an expert should be consulted.

Between the patent and profitable income are not only the production problems, but equally important, the merchandising and distribution problems as well. Very few items sell themselves. Even those that do must be brought to the attention of the right distributors, the right retailers. Large manufacturers are geared to handle this. The small fellow may experience many bitter disappointments along the line.

There are organizations which make a business of selling inventions. Patent attorneys will know of these. It can, however, be said flatly that the inventor who is prepared to put up with frustrations will have a hobby that will keep him very busy for a long time before he can sit back and start collecting royalties.

Many blind (and sighted people, too, for that matter), have patented devices which are useful only to blind people. In no in-

stance that can be recalled has this been worth the expense. The chances are, the patent is worthless to begin with because the product has probably been on the market or commonly known years before the idea was conceived by the patenting inventor. Patents are invalidated when this can be shown. Moreover, it seems safe to say that a large enough market simply does not exist among blind people to provide a volume of sales for anything sufficient to bring enough royalties to pay patent costs. And if no one can make a profit from producing something, that something isn't worth patenting.

If something useful to the blind, on the other hand, would be equally useful to others, then the picture changes. In that case, not only may a patent be worthwhile, but a commercial production and merchandising program should be developed.

TRAVEL

While the number of people who can devote a large part of their time to travel is limited, even those who are in a position to take occasional trips can fill richly many times the period actually spent away from home. On Talking Books and in braille are books which can throw light on the places to be visited, so that the trips themselves become more meaningful.

The most convenient method of getting to places is, of course, by air. Airplane personnel is unusually well trained in dealing with blind people. Both at the airport and in the air, the blind person is given every courtesy. Except for the usual "family rates" which sometimes apply early in the week, there are no fare concessions, and these family rates are not established for blind people.

Most train and bus lines offer a special concession to blind persons travelling with a guide. On busses, this is likely to be a straight two-for-one rate: a single ticket carries both. The same thing applies on New England railroads. Elsewhere, on trains, a first class ticket is required even if a blind person and a guide prefer to travel in coaches. If Pullman space is occupied, it must be paid for at regular rates. Certain special trains do not honor the travel coupons which are required to take advantage of the travel concession, but these are usually extra-fare trains.

The Travel Coupon Books are sent free on the submission

of properly filled out application blanks to the American Foundation for the Blind. Also required are small photographs of the individual—one for each type of book desired, and one for the files. A certification of blindness is required, too. Blind people travelling alone receive no reduction in fare, and one railroad, at least, is reported to be reluctant to carry blind people without guides. The vast majority of lines make no such objections.

Steamship lines are sometimes willing to extend special courtesy rates to blind people travelling with a guide. This may amount to a fare and a half for the two. Inquiries about this may be sent to the American Foundation for the Blind with full particulars as to the trip contemplated.

Very occasionally a person travelling with a dog guide encounters trouble with dining room stewards. This is not usual: most stewards go out of their way to be accommodating. By the letter of the rules in the last Pullman manual of instructions which could be found (it was dated 1949), dogs are not to be admitted to dining cars, and the person is to be served at no extra cost in his Pullman space. The same manual indicates that enclosed space (roomette, bedroom or the like), is to be offered on payment of chair or lower berth rates.

The rules have, in practice, been considerably relaxed. Most railroad employees raise no questions about trained dog guides.

FISHING

Camping and hiking present no special problems and have ardent devotees among both partially and totally blind people. So, too, has fishing, although many people seem to feel that special equipment would be helpful. The only thing listed in the Special Aids booklet¹² is a fishing bobber that whistles when there is a bite.

Many report that standard anti-backlash reels are fairly essential, but that no special adaptations are necessary. Shakespeare, Pflueger, Ocean City, and South Bend reels have been most often recommended. A new type of reel, sold under the trade name "Whirlaway," has impressed some people.⁵⁹ It is adapted to spinning, casting, or trolling and it holds 250 yards of 2 pound test Monofilament line (100 yards of 8 pound test Monofilament or

50 to 100 yards of 24 pound test braided silk or nylon line). The reel is bulb shaped and fits behind the rod. The line is completely enclosed, and is controlled by thumb pressure. Solid and tubular fiber glassrods are available to fit.

Casting may, at first, require considerable practice. A wooden box in the backyard furnishes a good practice target. As time passes, the blind fisherman should develop good control of distance and direction as the sound of the plug hitting the box is unmistakable. Some like to tie periodic knots in the line to help in judging the length of line which has been cast or played out.

Stream casting is always attended by hazards if there are overhanging trees. In boats, a sighted person is usually along. Great care, at such times, must be taken to avoid hooking the fellow fisherman, but if the blind person sits in the stern, this is not difficult.

A number of blind fishermen take special pride in tying their own flies or in fabricating lures. Some also enjoy making their own landing nets, and at least one center blind workmen make extremely creditable rods. Indeed, a number of blind fishermen build their own boats and service their own outboard or inboard motors. One blind fisherman has gone so far as to develop an especially appetizing method of smoking fish and now has an independent income from that source.

IV

Social Activities

In a high percentage of cities, and even in many of the smaller towns, there are organized social activities for blind people. In many instances even the travel difficulties are solved by volunteer or paid drivers who pick people up at their homes and return them there. Dances, theatricals, picnics, swimming parties, bingo games, forums and discussion groups, hobby classes, sleigh or hay rides, fishing expeditions, bowling, and a host of other activities are carried on.

This can be very good; or it can have an effect that some consider harmful. Many blind people find it "easier" to associate mainly with other blind people. Only in such an environment do they experience the freedom from social tensions which are likely to be present initially for the sole visually handicapped person in a sighted group. Whether it is worth the effort of overcoming these tensions is something each individual must, in the long run, decide for himself.

Leaving this consideration aside, there is unquestionable value for many newly blinded people in the group experiences that can be garnered from such organized social activities. This is the more so in centers where the program is in charge of qualified group workers. Here, it frequently happens that there is a steady turnover as newly blinded people come in and others flow back into their normal social activities.

The physical problems of blindness rule out very few normal social activities. There are even duties in a rifle club that can be carried on ably without sight. Blind people have been active in Lions Clubs, Elks, Masons, in labor unions, political clubs, civic organizations; in Junior Leagues, Ladies Aid Societies, Bridge clubs, and in Parent-Teacher groups. They take their place on program committees, entertainment committees, membership committees. They can do telephoning, speaking, entertaining, coordi-

nating, politicking and campaigning. They can help do surveys on community needs or on available resources. Sure proof exists in the number of these elected to public office or to offices in clubs of all kinds.

Not all people like to belong to clubs. It is not to be expected that a visual impairment would change this. But few people with normal sight are lacking in some kind of every day social life. This is to a certain extent based on the normal give and take, the exchange of simple favors or of advice. Loss of sight need not change this. It is too bad if it does. Ordinary neighborliness is too valuable an asset to give up. The blind housewife can prepare a light custard for an ailing friend, or baby-sit, or pass on household tips. A blind man can lend or borrow tools, discuss the political situation, or lend a hand to some task the man next door can't handle alone.

Often there are special skills, special experiences which can be even further cultivated. One woman runs cooking classes, another belongs to a group that entertains in hospitals, another teaches English to new comers to America, many teach Sunday School,⁶⁰ act as Girl Scout or Boy Scout leaders, or correspond with the homebound. Many have recently been working in the civil defense program as plane spotters, and so on.

Even the hobbies which are not primarily social offer social possibilities. They offer a common basis for get-togethers with other enthusiasts for the same hobby. They offer an opportunity to demonstrate abilities.

Most human beings like to feel useful. In remaining socially active a blind person may add to his sense of usefulness, not only for the present, but for the future as well. Because it has frequently been said that the greatest handicap in blindness is not the physical, but the social impediments which are set up. The sighted public, it is argued, do not give the blind credit for any abilities. They don't understand. They shout at the blind man. They address his companion instead of speaking to him. They won't let him do anything for himself.

This, of course, is changing, but slowly. When most blind people accepted the stereotype and sat at home, the man on the street was likely to know only the blind beggar with his tin cup full of

pencils. As more and more blind people get out in clubs, in jobs, in every-day activities, the newly blind are finding acceptance easier to win. More people know of a blind professor or lawyer or business executive or engineer or successful home-maker. They begin to suspect that loss of sight means simply that— not loss of experience, judgment, training, and function.

Accordingly, the individual who carries on social activities is contributing very effectively to a healthy trend which will make life better for those who come after. No amount of publicity will begin to do what blind people can do by demonstration. It is a responsibility which is not too onerous. It is a satisfaction for all time.

Addresses and References

In the following notes, initials will be used to indicate certain agencies which will be frequently mentioned:

AFB American Foundation for the Blind, 15 West 16th Street, New York 11, N. Y.

APH American Printing House for the Blind, 1839 Frankfort Avenue, Louisville 6, Ky.

HCS Hadley Correspondence School for the Blind, 620 Lincoln Avenue, Winnetka, Ill.

Howe Press. Howe Press, Perkins Institution, Watertown 72, Mass.

1. Recognized sources for dog guides include:

Guide Dog Foundation for the Blind, Inc., 1 Continental Ave., Forest Hills 75, N. Y.

Guide Dogs for the Blind, 1039 Rochester Road, Rochester, Mich.

International Guiding Eyes, Inc., 5501 Lankershim Boulevard, No. Hollywood, Calif.

Leader-Dog League for the Blind, 1039 Rochester Road, Rochester, Mich.

Seeing Eye, Inc., Morristown, N. J.

2. A complete list of agencies working for the welfare of the blind is found in *Directory of activities for the blind in the United States and Canada*, 133 pages. AFB \$2.00.

Information on agencies serving any given community can be secured by writing the Foundation.

3. Among the most explicit articles on cane techniques are:

Hoover, R. E. "The cane as a travel aid." Zahl, P. A., Editor, *Blindness*, Princeton, N. J., Princeton University Press, 1950. pp. 353-365.

Industrial Home for the Blind, Brooklyn, N. Y. "Instruction in physical orientation and foot travel;" a lesson plan outline. 1950. 62p.

Loufty, B. A., and Baker, O. J. "The use of the cane." *Outlook for the blind*, 43, 1949, pp. 197-200.

4. White wooden canes with or without scotchlite tape wrappings are sold by T. W. Minton & Co., Barbourville, Ky., as well as by numerous local cane manufactures. They are frequently distributed gratis by Lions clubs.

A folding white aluminum cane is sold by Colrod, Box 811, Chicago 90, Ill.

Scotchlite coated aluminum canes as well as telescopic metallic canes are also listed in "Aids for the blind." See note 12.

5. Bindt, Juliet. *A handbook for the blind*, New York, Macmillan Co., 1952. 244p.
6. Loomis, M. S. *You can learn to read braille*. A combination braille and ink-print text in 3 volumes. New York, Harper & Bros., 1946. Krebs, B. M. *Transcriber's guide to Standard English braille*. New York, New York Guild for the Jewish Blind, 1953. Available in braille and inkprint.

Correspondence courses are also offered without charge by: Hadley Correspondence School for the Blind, Winnetka, Ill. Lion Braille Department, P. O. Box 97, Orlando, Fla.

A pamphlet "Instruction material for touch reading," giving a list of available primers for teaching braille to adult blind persons, may be ordered from AFB at a price of 15¢.

7. For the address of the regional lending library for the blind which serves any area, see the *Directory of activities for the blind* (Note 2), or write Division for the Blind, Library of Congress, Washington 25, D. C.
8. Braille slates are sold by APH and Howe Press. Both concerns also sell braillewriters, as, from time to time, does the Braille Institute of America, 741 North Vermont Ave., Los Angeles 29, Calif. A braillewriter of Danish manufacture is distributed by Beutler, Inc., 457 West Broadway, New York 12, N. Y.

Braille paper is sold by APH, Howe Press, and Braille Institute of America, as well as by some local agencies for the blind.

9. Pencils leaving very dark lines (for the use of the low-visioned) are mechanical china marking pencils sold under the trade name of Listo or Scripto.
10. Discounts on portable typewriters can be secured through the Special Services Department of AFB. Letters of introduction may also be had enabling a blind purchaser to secure a reconditioned standard typewriter at a very low price.
11. Ben 'Ary, R. *Touch typing in 10 lessons*. Braille. 1 vol. APH. \$2.30. Recorded. 6 records. Same source. \$7.30. A braille practice volume as well as mimeographed copy of the text is also available.

A free braille correspondence course in typing is offered by the HCS.

Other braille material on typing includes:

Blackstone, E. G. & Yerrian, C. T. *Typewriting for personal use*. 3 vol. 484p. APH. \$10.80.

Lessenberry, D. D. & Crawford, T. J. *20th century typewriting*. 9 vol. 1407p. APH. \$29.25.

Lessenberry, D. D. & Reynolds, Helen. *20th century typewriting tests*. Gr. 1½ braille. 12 pamphlets. 134p. APH. \$1.50.

12. "Aids for the blind." A free inkprint catalog of tools and devices which are sold at the Special Services Department of AFB.
13. Two publications listing books on handicrafts are:
Catalog of American Handicrafts Co., 45 South Harrison Street, East Orange, N.J.
"Information on crafts for the homebound." Division of Vocational Rehabilitation, University Station, Grand Forks, N. D.
14. *Where to get what*, the national directory of crafts and art suppliers. Penland School of Handicrafts, Penland, N. C.
15. Robert J. Golka, 400 Warren Ave., Brockton, Mass.
S & S Leather Co., Colchester, Conn.
16. A useful multipurpose vise for drill press work is the Float-Lock Safety Vise put out by the Float Lock Corp., Bloomfield, N. J.
17. The Tool-Pac, a multipurpose power tool, is manufactured by Hoover Company, Kingston-Conley Division, North Plainfield, N. J.
18. Tyler Spiral Blades are manufactured by Tyler Manufacturing Co., Inc., 60 Beaver St., New York 4, N. Y.
19. Plastic Veneers are manufactured by the Meyercord Co., 5323 West Lake St., Chicago 44, Ill., and Transveneer Sales Co., 125 West Hubbard St., Chicago 10, Ill.
20. Hjorth, Herman. *Basic woodworking processes*. 3 vol. 368p. APH. \$10.50.
21. Sewing machine guides reported as being especially helpful to the blind, are offered by Simon Attachment Co., 49 West 27th Street, New York 1, N. Y.
22. Sewing machine guards are available from the Industrial Division of the Singer Sewing Machine Co., 561 Broadway, New York, N. Y.
23. Sears, Roebuck lists Self-Threading Sewing Machine Needles as Catalog No. A 25 K 817.
24. See Section on Writing and Drawing Aids in AFB catalog, Note 12.
25. Carroll, Alice. *Complete guide to modern knitting and crocheting*. 4 vol. 596p. APH. \$8.40.
26. Duncan, Ida Riley. *Complete book of progressive knitting*. 3 vol. 463p. APH. \$11.85.
27. Sears, Roebuck currently lists a Rug Braider Kit as Catalog No. 25 K 4390 at \$1.19 plus postage on 7-oz.
28. Rag slitters are sold by Ashawog River Mills, Inc., Groton, Conn. under the name Rigby Cloth Stripping Machines, Model "B"
29. Sears, Roebuck currently lists the "Weave-it" loom as Catalog No. 25 K 4346 at \$1.17 plus postage on 1-lb., 4-oz.
30. The current Sears, Roebuck listing of an adjustable loom is Catalog No. 25 K 5348, \$1.25 plus postage on 3-lbs.

31. The current Sears, Roebuck listing for a Waffle Weave Rug Frame is Catalog No. 25 K 05574 \$3.25 plus postage on 3-lbs.
32. Bonhop Hand Treadle Loom is sold by Creative Playthings, 5 University Place, New York, N. Y. Catalog No. A 446, \$5.95.
33. Gallinger, Osma C. *Games of weaving*. Grade 1½ braille. 1 vol. 133p. APH. \$3.25.
34. Dietrich, E. N. *Caning manual*. Grade 1½. 41p. APH. 60¢
35. Blonde Tape Solder is put out by the Blonde Oil Co., Brooklyn 37, N. Y. and is sold in most 5 & 10¢ stores at 25¢ a strip.
36. An unusually complete line of beads is handled by Walco Bead Company, 37 West 37th Street, New York, N. Y.
37. The Townline brand of non-fire clays and glazes is handled by American Handicrafts, Inc., 45 South Harrison St., East Orange, N. J.
38. *Playthings directory*, published annually by McCready Publishing Co., 71 West 23rd Street, New York 10, N. Y. 50¢.
39. The following braille home repair manuals are available from the APH:
Accident prevention. 2 vol. 233p. \$3.80.
 Bedill, Earl L. & Gardner, Ernest G. *Household mechanics*. 3 vol. 434p. \$10.80.
 Whitman, Roger B. *First aid for the ailing house*. 5 vol. 759p. \$11.50.
 Zemurray, Sarah. *Useful information for every household*. 2 vol. 352p. \$5.00.
40. Bast, Herbert. *Essentials of upholstery*, APH. 1 vol. 196. \$2.50.
41. Good permanent braille labels can be made on .005 inch metal.
42. Findlay, Hugh. *Gardening for health and happiness*. APH. 1 vol. 115p. \$1.90.
43. Braille books on animals include the following which are available from APH:
American angora handbook. 1 vol. 149p. \$2.10.
 Bianco, Margery. *All about pets*. 1 vol. 180p. \$3.60.
 Hurd, Louis M. *Modern poultry farming*. 6 vol. 1015p. \$13.80.
 Rice, James E. & Botsford, Harold E. *Practical poultry management*. 6 vol. 1024p. \$15.00.
 Washburn, Frederic L. *The rabbit book*. 1 vol. 222p. \$2.90.
 Wright, K. T. *Profitable poultry management*. 1 vol. 173p. \$2.30.
44. Hooper, Marjorie S. & Langan, Mrs. Paul J. *Braille cookbook*. 1 vol. 230p. plus 33 pages braille gummed labels. APH. \$3.50.
 Cox, Lois Virginia. *103 selected recipes*. 1 vol. 64p. APH. \$1.50.

A complete bibliography of braille cookbooks has been prepared by Murray B. Allen and is scheduled to be made available through the Western Conference of Teachers of the Blind, Jack

- Yeaman, President, c/o Division of Deaf & Blind, Capitol Building, Cheyenne, Wyo.
45. Rodenberg, L. W. *Key to braille music notation*. APH. 1 vol. 104p. (inkprint). \$3.30. 2 vol. Grade 1½ braille. 329p. \$5.50.
Nemeth, Abraham. *Dictionary of braille musical symbols*. APH. 1 vol. \$2.95.
 46. Press-brailled music is sold by:
APH; Howe Press; Illinois School for the Blind, Jacksonville, Ill.
 47. The Library for the Blind, 166 Sixth Ave., New York, N. Y. has had a great deal of braille music which is lent freely to blind people anywhere.
 48. Among volunteer groups transcribing music into braille on request are: United Order of True Sisters, Johanna No. 9, c/o Chicago Public Library, Chicago, Ill.
Volunteers Service for the Blind, 332 South 13th St., Philadelphia, Pa.
 49. Jacobs, Frances E. *Self-teaching music records*. 3 records. 10" album, with braille and inkprint instructions. New York Guild for the Jewish Blind, 1880 Broadway, New York, N.Y. \$2.55, post-paid.
 50. Hart, John G. *Radio code by the voice code method*, (with accompanying braille manual) is available on Talking Books in 5 records.
 51. *Braille technical press*. Robert W. Gunderson, 980 Waring Ave., New York 69, N. Y. \$6.00 per year.
 52. APH lists:
Gunderson, Robert W. *How to become a radio amateur*. 2 vol. 400p. \$5.40.
—————. *Radio amateur's license manual*, 1951 ed. 2 vol. 400p. \$5.40.
 53. Louis Tannen, 120 West 43rd St., New York, N. Y.
Other dealers in magical apparatus in New York are:
Abbot's Conjurers Shop, 130 West 42nd Street.
Max Holden, 220 West 42nd Street.
Magic Center, 741 8th Avenue.
 54. *Directory of periodicals of special interest to the blind*, AFB.
Free braille study courses in many subjects up to college levels are offered by HCS.
 55. National Committee for Recording for the Blind, 36 West 44th Street, New York, N. Y.
 56. See section on Recording.
 57. Press braille maps are sold by:
Howe Press, Perkins Institution, Watertown 72, Mass.
Illinois School for the Blind, Jacksonville, Ill.

A rubber relief map of the United States cut along state lines is being offered by Creative Playthings, 5 University Place, New York, N. Y., as are the Sifo Jigsaw maps cut from $\frac{3}{8}$ inch plywood.

A plastic jigsaw map of the United States is offered through the Special Services Department¹² which offers also a 14 map set of embossed relief and political maps at a price of \$7.00 a set.

58. A catalog of excellent facsimiles of sculpture is published by Metropolitan Museum of Art, New York, N. Y. at a price of 15¢.
59. A new type of fishing reel which some feel especially helpful for blind fishermen is the Whirlaway, put out by Great Lakes Products, 8655 Military Ave., Detroit, Mich.
60. The Bible in both braille and Talking Book form is sold to blind people directly at a special, subsidized rate by American Bible Society, Department for the Blind, 450 Park Ave., New York, N. Y.

Much additional religious literature will be found listed in the booklet, *Directory of periodicals of special interest to the blind* (see Note 54).

